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BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS
KRISTIN K. MAYES, CHAIRMAN
GARY PIERCE
PAUL NEWMAN
SANDRA D. KENNEDY
BOB STUMP

IN THE MATTER OF THE APPLICATION OF COOLIDGE POWER CORPORATION, IN CONFORMANCE WITH THE REQUIREMENTS OF ARIZONA REVISED STATUTES 40-360.03 AND 40-360.06, FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AUTHORIZING CONSTRUCTION OF A NOMINAL 575 MW NATURAL GAS-FIRED, SIMPLE CYCLE GENERATING FACILITY LOCATED WITHIN THE CITY OF COOLIDGE IN PINAL COUNTY, ARIZONA	DOCKET NO. L-00000HH-08-0422-00141 CASE NO. 141 **NOTICE OF COMPLIANCE ACTION REGARDING CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY CONDITION 3**

Pursuant to Decision Number 70636 and the resulting Certificate of Environmental Compatibility ("Certificate") authorizing construction of a nominal 575 MW natural gas-fired, simple-cycle generating facility and associated generation intertie transmission line, Coolidge Power LLC ("Coolidge Power") submits the Transmission Arrangement Interconnection Study for the interim period of September 2010 through

May 2013 for the Coolidge Peaking Generating Station, prepared by Salt River Project, in compliance with Certificate Condition 3. *See* Attachment 1.

RESPECTFULLY SUBMITTED this 25th day of June, 2010.

MOYES SELLERS & SIMS

Steve Wene
Attorneys for Coolidge Power LLC

Original and 25 copies of the foregoing filed this 25th day of June, 2010, with:

Docket Control
Arizona Corporation Commission
1200 West Washington
Phoenix, Arizona 85007

ATTACHMENT 1

Delivering More Than Power.®

Transmission Arrangement Interconnection Study
for the interim period of September 2010 through May 2013
for the
Coolidge Peaking Generating Station

Final -

Prepared by:

Salt River Project

For

SRP

April 8, 2009

Jeff Loehr, Transmission System Planning

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I. Executive Summary

An original Interconnection System Impact Study ("Original Interconnection Study", dated December 13, 2007) was performed in response to the Coolidge Power Corporation (a subsidiary of TransCanada Pipeline USA, Ltd) ("TransCanada") request to provide interconnection service for a proposed new generation facility to be called TransCanada Coolidge Generating Station ("CGS"). The requested in-service date for the interconnection is September 1, 2010 with an initial synchronization date of October 1, 2010. The period of September 1, 2010 through May 1, 2011 is to allow for testing of the generation units. The estimated commercial operation date for the CGS is May 1, 2011. This new generation facility will interconnect with a new proposed Randolph 230kV Switchyard.

Recently, SRP has identified the need to utilize an alternative transmission configuration to interconnect the CGS to SRP's transmission system for an interim period. As a result, SRP has prepared this Transmission Arrangement Interconnection Study ("Final Report" or "Alternative Connection Study") for the interim period of September 2010 through May 2013. The purpose of this Alternative Connection Study is to determine any system impacts and required action to accommodate the proposed interconnection using a different transmission configuration from that proposed in the Original Study.

SRP has proposed delaying the completion of the South East Valley 500kV ("SEV") Project and associated line work from Pinal West to Pinal Central from the original in-service date of May 1, 2011, to May 1, 2013. To allow for the delay of the Pinal Central station work, but still maintain loop service to the Randolph 230kV switchyard beginning by May 1, 2011, an alternative system connection is proposed. This includes constructing the originally proposed 230kV project from Randolph to Abel to Dinosaur by May 1, 2011. The major change is that, instead of constructing 230kV back to Pinal Central with the 500/230kV connection, the 500kV constructed portion of the double circuit 500/230kV line from Randolph to Abel to Dinosaur to Browning will be energized and operated at 230kV from September 1, 2010 through Spring 2013 to provide the second line out of Randolph as required for the CGS.

Based on study results for the modified system configuration, the following conclusions were developed:

- The originally proposed RAS for N-1 conditions during the time period from September 1, 2010 to May 1, 2011 is no longer required, and no operational restrictions are anticipated under normal system conditions during that CGS testing period.
- Following the completion of the modified system by May 1, 2011, at commercial operation, there are also no problems for any N-1 outages.
- For two N-2 outages (the outage of both circuits on the double circuit structure) a Remedial Action Scheme (RAS) is required to prevent stability and thermal overload problems. These RAS schemes are acceptable per NERC and WECC criteria for N-2 outages.

- The current SRP transmission plan includes the proposed Abel – Schrader 230kV line in 2012 that should eliminate the need for the above RAS for thermal reasons during N-2 conditions, although it may still be required for stability reasons. Following the completion of the SEV Project, currently planned for 2013, the original Interconnection System Impact Study results and transmission configuration will again be valid.

II. Introduction

Following completion of the original Interconnection System Impact Study ("Original Interconnection Study"), SRP performed this Transmission Arrangement Interconnection Study for the interim period of September 2010 through May 2013 ("Alternative Connection Study"). SRP performed this new study to assess the impacts of changing the previously studied transmission connection assumptions in response to lower load growth and associated delays in transmission project schedules. Study assumptions and results in this Final Report supersede and replace in their entirety, as appropriate, the prior relevant assumptions and results of the Original Interconnection Study during the interim period until the complete final facilities are placed in service. Once all planned facilities are constructed –i.e., after the interim period -- the Original Interconnection Study results shall be applicable.

III. Study Methodology

The Alternative Connection Study procedures followed were:

- SRP utilized existing studies to the extent practicable in performing the Alternative Connection Study, including the Original Interconnection Study.
- Only the proposed system from September 1, 2010 through May 1, 2011 and the proposed system after May 1, 2011 were evaluated.

IV. Study Assumptions

For this study the following assumptions were used:

a. No additional changes in TransCanada interconnection, testing, or commercial operation date.
b. The alternative transmission system is constructed as proposed with the Randolph – Browning 230kV circuit (the 500kV circuit energized at 230kV) in service by September 1, 2010 and the Randolph – Abel – Dinosaur 230kV circuit in service by May 1, 2011.

V. Transmission System Impacts

The impacts to the SRP Transmission System with up to 561MW of generation at the TransCanada Coolidge Generating Station between September 1, 2010 and May 1, 2011 are as follows:

1. No continuous overload problems.
2. No N-1 outages cause overloads due to TransCanada generation being online.
3. No N-2 common structure overloads for outages between Randolph and Browning.

This is a change from the Original Interconnection Study and will result in the elimination of the previously anticipated need to restrict TransCanada generation output during this testing period timeframe for certain system loading levels.

This change from the Original Interconnection Study will also result in the elimination of the previously anticipated need for a RAS to drop generation following an outage of the Browning – Dinosaur 230kV line.

These changes are a result of the change in proposed configuration for this time frame. Previous studies used a radial connection from Randolph to Dinosaur, which caused loading problems on the Dinosaur 230/69kV transformer for various scenarios. The proposed alternative connection has Randolph connected radialy to Browning during this time frame, which eliminates the potential for loading problems on the Dinosaur transformer. Due to the existing strong system at Browning this does not cause any other issues.

The impacts to the SRP Transmission System with 561MW of generation at the TransCanada Coolidge Generating Station between May 1, 2011 and May 1, 2013 are as follows:

1. No continuous overload problems.
2. No N-1 outages cause overloads.
3. For the N-2 outage of Randolph – Browning and Abel – Dinosaur 230kV lines on the same structures between Abel and Dinosaur, approximately 250MW of generation at Randolph needs to be tripped to avoid overloading the Abel 230/69kV transformer. This is less than the requirement for stability for the same outage and is therefore not a limit. This may also be mitigated with reclosing one of the circuits immediately following the outage.

The current SRP transmission plan includes the proposed Abel – Schrader 230kV line in 2012 that should eliminate the need for the above N-2 generation tripping for thermal reasons, although it may still be required for stability reasons. Following the completion of the SEV project, currently planned for 2013, the Original Interconnection Study results will again be valid.

VI. Stability

Transient stability analysis is a time-based simulation that assesses the ability of a power system to maintain synchronism during a disturbance. Transient stability studies were performed to verify the system's stability following a critical fault on the system. For the purpose of this Alternative Interconnection Study, the 2011 WECC Heavy summer power flow base case and dynamic file were modified to include detail of the lower voltage facilities (69kV) of SRP's system in the surrounding area. Power flow simulations were performed to verify convergence of the modified base case. A flat run test transient stability simulation was also performed on the modified base case and dynamic file to assure no anomalies were present before the transient stability studies were performed with contingencies. The power flow simulation showed that an SVD model located at Bus 33210 POT SVC was causing a divergence in the power flow analysis. This bus provided 31 MVAR in the Pacific Gas & Electric area. The SVD was turned off in the simulation to resolve the problem. This device was considered too remote to have a significant impact on the transient stability results.

Transient stability analysis was performed based on WECC Disturbance-Performance Criteria for selected system contingencies. Initial transient stability contingencies were simulated out to 10 seconds. The fault simulations for all N-1 faults were all assumed to be zero impedance three phase faults placed at substation busses or at the appropriate distance on a line. The fault simulations for all N-2 faults were all assumed to be single phase faults placed at substation busses or the appropriate distance on a line. Fault clearing at the substation busses initiated the dropping of selected circuit elements. Fault durations were assumed to be 4 cycles for 500kV faults and 4 cycles for 230kV faults. All transient simulations use WECC Standard "epcl" programs "alldyns.p", "ocsgov.p" and "pv10_run.p". The dynamic models for GE LM6000 used were developed from generator parameters provide by TransCanada. The models developed were the solid state rotor model (genrou), excitation system model (esac7b), and Power System Stabilize model (PSS2a). The governor model (ggov1) was provided by TransCanada.

The transient stability contingencies were selected by the fault locations that would have the largest impact on the surrounding transmission system with the new generation facility in-service. The contingencies were studied for modified 2011 Heavy Summer WECC base case and a transmission sensitivity base case that included the modified transmission connections. The following are the contingencies selected for these transient stability studies:

230kV 3-phase Fault at Randolph, clear Randolph - Browning,
230kV 3-phase Fault at Randolph, clear Randolph - Abel,
230kV 3-phase Fault at Browning, clear Randolph - Browning,
230kV 3-phase Fault at Abel, clear Randolph - Abel,
230kV 1-phase Fault at Abel on both circuits, clear Abel – Dinosaur and Randolph – Browning,
230kV 1-phase Fault at Dinosaur on both circuits, clear Dinosaur – Browning and Randolph – Browning.

Study results were evaluated using WECC Reliability Criteria, and the North American Electric Reliability Council (NERC) Planning Standards shown in (Table W-1 and Figure W-1). The transient voltage, frequency and rotor angle were monitored at the following busses (the TCG busses are the generator busses for TransCanada units #1 and #12):

Palo Verde 500kV	Hassayampa 500kV	Navajo 500kV	Kyrene 500kV
Santan 230kV	Dinosaur 230kV	Abel 230kV	Randolph 230KV
Abel 69kV	Dinosaur 69kV	TCG-G 1 13.8kV	TCG-G12 13.8kV

The bus voltage plots are used to measure the transient voltage, the duration of the maximum voltage dip, and the duration of the voltage oscillations before the voltage reaches a steady state condition. Bus frequency plots are used to measure frequency fluctuations post-fault that are caused by system imbalance between generation and load. Rotor angle plots are used to measure the potential to go out-of-step from the rest of the system following a disturbance.

Using the WECC criteria for a single element contingency (NERC/WECC Category 'B'), the new generation facility did not violate transient voltage dip percentages at any load or non-load bus. There were no violations for frequency dipping below 59.6HZ over 6 cycles on any load busses (the TransCanada generator busses and the Randolph 230kV bus are not load busses as no customer load is served). For the WECC criteria for a two element contingency (NERC/WECC Category 'C'), there were voltage and frequency violations as explained below.

There are stability concerns for an outage of both circuits between Abel and Browning that need to be addressed by the installation of a RAS to trip generation at Randolph for the loss of either:
Randolph – Browning and Abel – Dinosaur 230kV lines
Randolph – Browning and Dinosaur – Browning 230kV lines

In order to comply with WECC standards and maintain a stable system, up to 8 units at TransCanada must be tripped within 10 cycles following one of the above N-2 outages to maintain system stability. The number of units to be tripped may be dependent on other system conditions that will be reviewed prior to the RAS being installed by May 1, 2011.

There are no stability concerns for a double circuit outage between Randolph and Abel as the outage will result in the isolation and dropping of all generation at Randolph. There are no other probable N-2 outages in the area that may have an impact on the stability of TransCanada generation. Following the completion of the SEV project in 2013 the Original Interconnection Study results hold true and the above outages do not cause problems. It is possible that, following the construction of the planned Abel – Schrader 230kV line in 2012 that the RAS can be removed, however this will be studied in the future when the timing and scope of the proposed 2012 system additions is more firm. There is no need for a RAS for the time period from September 1, 2010 through

May 1, 2011 as Randolph is connected radialy from Browning on only one line, and the outage of this line simply drops the plant.

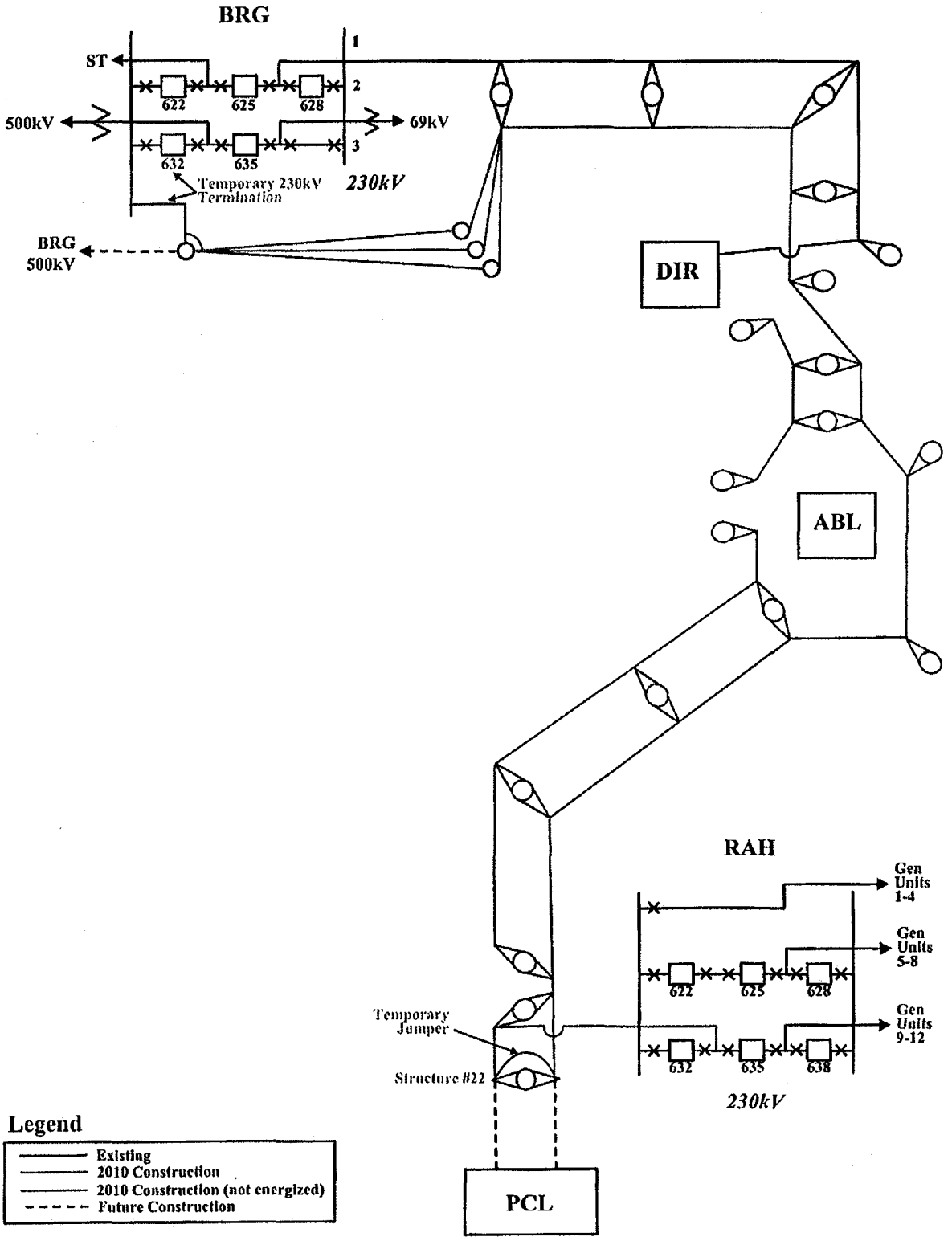
VII. Conclusions

Based on study results for the modified system configuration, the following conclusions were developed:

1. The originally proposed RAS for the time period from September 1, 2010 and May 1, 2011 is no longer required, and no operational restrictions are anticipated under normal system conditions.
2. Following the completion of the modified system by May 1, 2011 there are also no problems for any N-1 outages.
3. For two N-2 outages (the outage of both circuits on the double circuit structure) a Remedial Action Scheme (RAS) is required to prevent stability and thermal overload problems. These RAS schemes are acceptable per NERC and WECC criteria for N-2 outages.

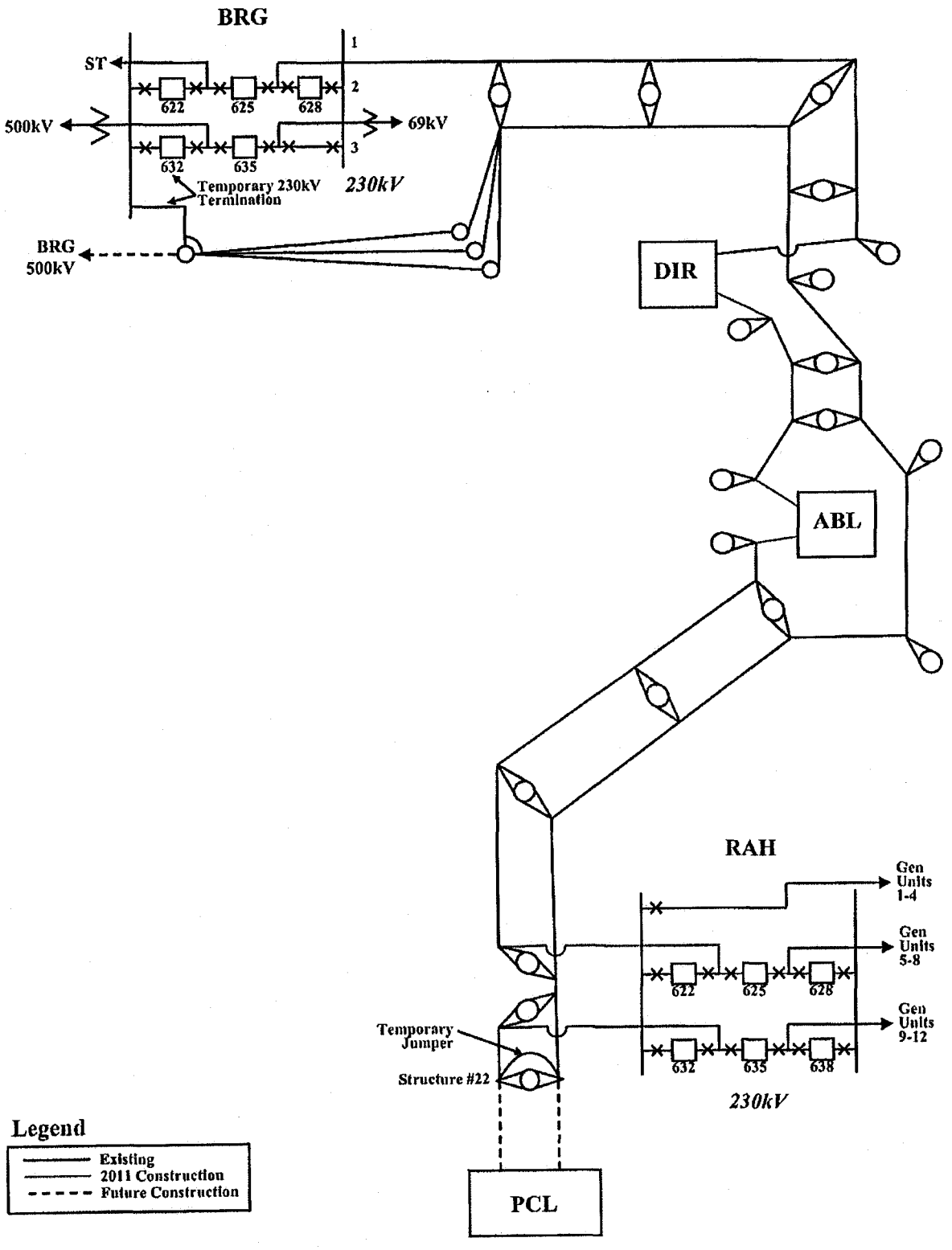
Based on these results the proposed modified transmission connections are acceptable to SRP with the appropriate RAS protection schemes for N-2 outages as noted.

TEMPORARY 2ND 230KV CIRCUIT AT RANDOLPH – STEP 1
Sept 2010



Temp 2nd 230kV RAH - Step 1 01/07/09

TEMPORARY 2ND 230KV CIRCUIT AT RANDOLPH – STEP 2
May 2011



Temp 2nd 230kV RAH - Step 2 01/07/09